

# VISOR® V20 Allround Color

Advanced vision sensor for complex inspection tasks, 12 mm



EtherNet/IP™

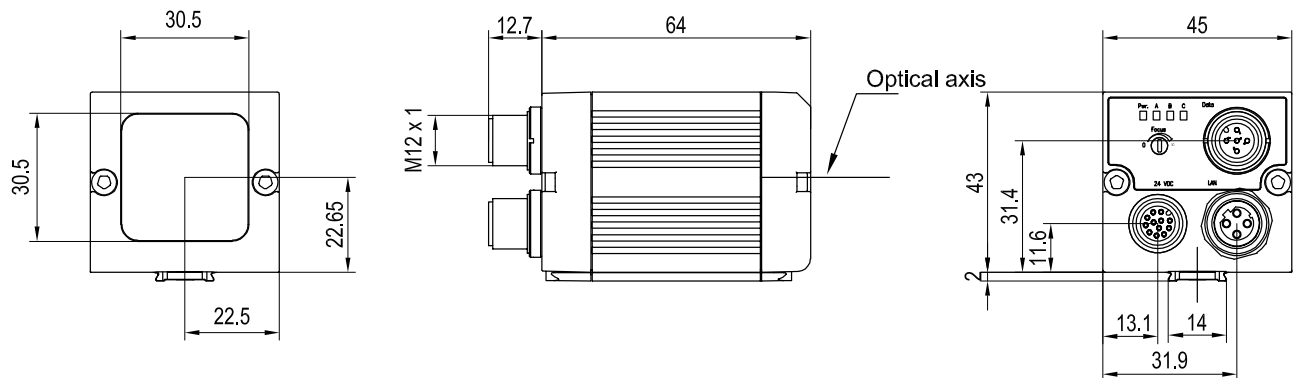
## PRODUCT HIGHLIGHTS

- All evaluations ("Detectors") of object sensor and code reader united in one device
- Highly accurate evaluation via 1.3 mega- pixel colour chip
- Real-world engineering units and robot coordinates at a mouse click
- Precise position determination: X/Y-position and orientation
- Can be used for all common 2D-Codes (ECC 200-Data-matrix) and common 1D-bar codes
- User-friendly configuration and viewer software with graded user rights and online help

| Optical data                                       |                                                                                       | Functions                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Resolution                                         | 1280 × 1024 pixels                                                                    | Number of jobs / detectors      | max. 255 / max. 255                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| CMOS                                               | 1/1.8", colour                                                                        | Detectors                       | Contour; pattern comparison, calliper; BLOB, contrast, brightness, grey level, data code, bar code, OCR, colour list, colour area, colour value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Integrated lens, focal length                      | 12 mm, adjustable focal position                                                      |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Adjustment range                                   | 30 mm to infinity                                                                     | Properties                      | Position tracking: X/Y and orientation; pattern comparison / contour: teach-in and detection of patterns and contours; calliper: distance between edges; BLOB, grey threshold, brightness: evaluation of brightness; contrast: evaluation of contrast; colour value: output of colour values; colour area: two-dimensional colour inspection with adustable tolerance; colour list: detecting the most similar colours; bar code: reading 1D bar codes, EAN, UPC, RSS, 2/5 Interleaved, 2/5 Industrial, code 32, code 39, code 93, code 128, GS1, pharm code, codabar; data code: reading 2D codes: ECC200, QR code, PDF 417; OCR |
| Integrated illumination                            | White LEDs                                                                            |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Minimum field of view, X × Y                       | 16 × 13 mm²                                                                           | Typical cycle times²            | Typ. 20 ms pattern comparison; typ. 30 ms contour; typ. 8 ms calliper; typ. 30 ms BLOB; typ. 2 ms brightness; typ. 2 ms contrast; typ. 2 ms grey threshold; typ. 2 ms colour value; typ. 30 ms colour area; typ. 2 ms colour list; typ. 30 ms bar code; typ. 40 ms data code; typ. 15 ms per character OCR                                                                                                                                                                                                                                                                                                                        |
|                                                    |                                                                                       |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                    |                                                                                       |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Electrical data                                    |                                                                                       | Mechanical data                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Operating voltage, +U <sub>B</sub>                 | 18 ... 26.4V DC¹                                                                      | Dimensions                      | 65 × 45 × 45 mm (without plug)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Current consumption (without illumination and I/O) | ≤ 120 mA                                                                              | Enclosure rating                | IP 67                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Current consumption (without I/O)                  | ≤ 200 mA                                                                              | Material, housing               | Aluminium, plastic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Protective circuits                                | Reverse-polarity protection, U <sub>B</sub> / short-circuit protection of all outputs | Material, front screen          | Plastic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Power On Delay                                     | Ca. 13 s after Power on                                                               | Ambient temperature: operation  | 0 ... +50° C³                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Outputs                                            | PNP / NPN (switchable)                                                                | Ambient temperature: storage    | -20 ... +60° C³                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Max. output current (per output)                   | 50 mA, 100 mA (pin 12)                                                                | Weight                          | Ca. 160 g                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Inputs                                             | PNP/NPN High > U <sub>B</sub> -1 V, Low < 3 V                                         | Plug connections                | Supply and I/O M12, 12-pin<br>Ethernet M12, 4-pin<br>Data M12, 5-pin                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Input resistance                                   | > 20 kOhm                                                                             | Vibration and impact resistance | EN 60947-5-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Encoder input                                      | High > 4 V                                                                            |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Interfaces                                         | Ethernet (LAN), RS422, RS232, EtherNet/IP, PROFINET, SensoWeb                         |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Inputs/outputs                                     | 2 inputs, 4 outputs,<br>4 selectable inputs/outputs                                   |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                    |                                                                                       |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

<sup>1</sup> Max. ripple < 5 V<sub>SS</sub>    <sup>2</sup> with VGA-resolution (640 x 480 pixels)    <sup>3</sup> 80 % air humidity, non-condensing

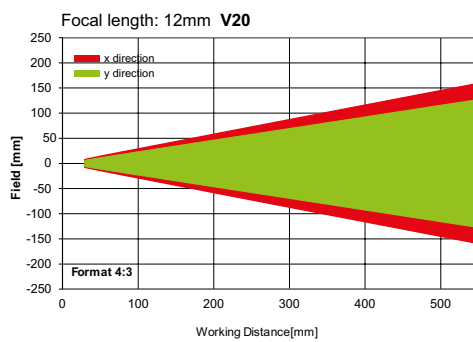
# VISOR® vision sensor



153-00911

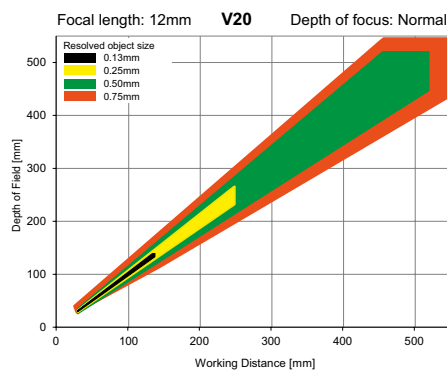
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## Field of view



155-01637

## Depth of field: normal



155-01636

| Illumination | Part number      | Article number |
|--------------|------------------|----------------|
| White        | V20C-ALL -A2-W12 | 536-91036      |

## Accessories

|                       |                |
|-----------------------|----------------|
| Connection cables     | From Page A-38 |
| Illumination          | From Page A-30 |
| Brackets              | From Page A-14 |
| Interface accessories | From Page A-42 |